Non-lethal weapons: operational and policy developments

Nick Lewer

UK (N Lewer PhD)
(e-mail: N.Lewer@Bradford.ac.uk)

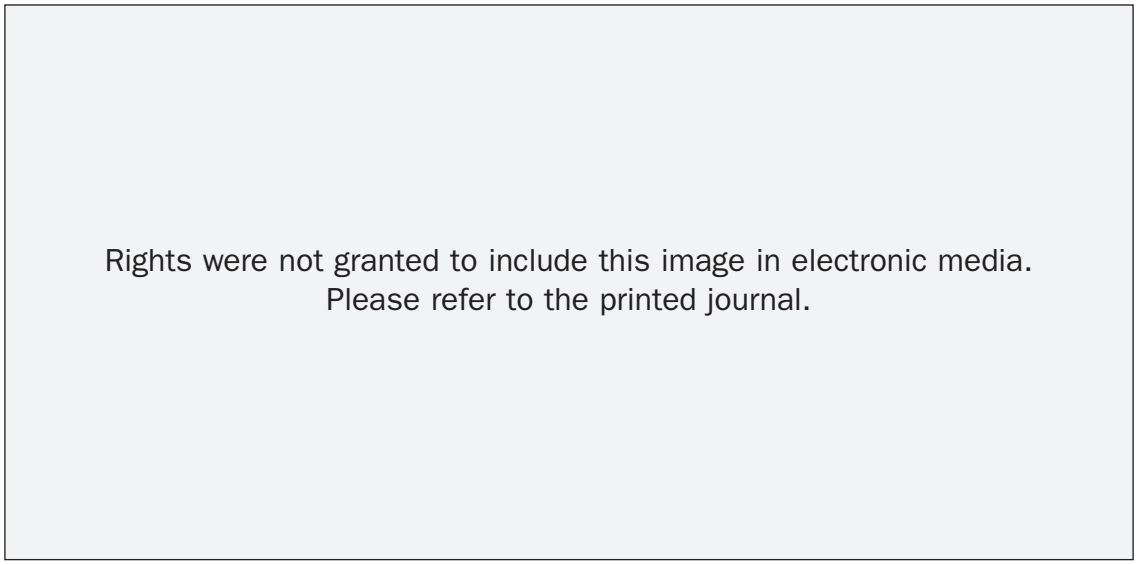
Nick Lewer specialises in conflict resolution and peacebuilding, and coordinates the non-lethal weapons research project at the University of Bradford. He is director of the Centre for Conflict Resolution at the Department of Peace Studies, University of Bradford, Bradford, BD7 1DP, UK.

The US Department of Defense defines a non-lethal weapon as a discriminate weapon that is explicitly designed and used so as to incapacitate personnel or material while minimising fatalities and undesired damage to property and environment. Over the past decade, interest has increased in the use of non-lethal weapons because of rapid advances in non-lethal technology (push factors) and changing operational requirements from military and police forces (pull factors). Alternatives to lethal methods are needed in peacekeeping and peace support operations, particularly in situations in which combatants and civilians are mixed together.

Presence of the international media—the so-called CNN effect—in war zones, recording the brutality of violent conflict and responses to it, has encouraged military forces and policy makers to look for alternatives to the use of lethal force, particularly when dealing with civilians. There has been corresponding interest from civilian law enforcement agencies and prison services for non-lethal arrest and restraint techniques, and post Sept 11, 2001, much discussion took place with respect to use of non-lethal weapons on aircraft to tackle hijackers.

Existing non-lethal weapons span a broad range of technologies, including: kinetic energy (truncheons, plastic bullets, water cannon, and bean bags filled with lead shot); optics (strobe and flash blinding lights); incapacitating chemicals (CS gas, pepper spray, malodorants, and barrier foams); electroshock (stun guns, batons, belts); laser (tagging, dazzling, and blinding); and mechanics (nets, barriers, and caltrops). We have seen these weapons deployed in many situations, ranging from use by police during arrest of violent criminals, in mass public disorders, for release of hostages, and in peace support operations. A highly controversial use of incapacitating chemicals took place in October, 2002, when a group of Chechens took hostages in a Moscow theatre. After several hostages had been killed, Russian troops pumped an incapacitating gas into the theatre with the objective of rapidly knocking out both hostages and Chechens. The gas was later identified as a derivative of fentanyl, perhaps mixed with other agents. Unfortunately, many of the hostages died as a result of the gas. Non-lethal weapons have been used by US marines in Somalia, Haiti, and Kosovo during peace support operations, when their activity was more like civil policing than war fighting.

A new generation of non-lethal weapons is under development. A weapon that uses infrasonic frequencies and can cause nausea, disorientation, and bowel spasms is presently being worked on. Another acoustic weapon—called a directed stick radiator, which fires high intensity sonic bullets or pulses of sound of 125–150 dB for a second or two—has been demonstrated by a company in the USA. Such a weapon could, when fully developed, have the capacity to knock people off their feet. In Germany, a mobile infrapulse generator is being developed that produces disruptive noise and generates low-frequency shockwaves that resonate with body organs, potentially causing physical damage. Electroshock weapons, such as the taser stun gun, which delivers a high voltage charge of 50 000 V via small darts connected to fine wires, are now widely used. Police forces in the USA and UK are testing the A3P3 (aerosol arresting agent/pulse projected plume) gun, which combines several non-lethal technologies in one weapons system—electric shock, pepper spray, and video surveillance. The weapon uses sensors to judge the distance of an attacker before releasing an amount of pepper spray. If an attacker receives an electric shock at the same time, forced inhalation results, making them inhale more of the pepper spray. A new wireless electric shock weapon is being developed in Germany called the plasma taser, which shoots an aerosol spray towards the victim along which an electric shock can



AP

Protesters run from tear gas and rubber bullets

be conducted. The advantage of this system is that, unlike the original taser, which is a single-shot weapon of short range, the plasma taser can be used repeatedly with a greater range.

The Ottawa treaty (1997) banning use, development, production, stockpiling, and transfer of anti-personnel landmines accelerated research into non-lethal alternatives. Mines under development include those that fire sticky entanglement nets, electrical stunning wires (a taser landmine), small rubber balls (claymore type), and incapacitating chemicals. In early 2001, US developers demonstrated a vehicle-mounted active denial system, also called the people zapper, which uses microwaves that penetrate the skin to a depth of about 0·4 mm, causing water molecules to vibrate. This event produces heat and causes discomfort, which has been compared to touching a hot lightbulb. The closer an individual gets to the weapon the more pain is felt.

In the area of chemical weapons, malodorants—also referred to as skunk shots—are being extensively investigated. Research over the years has investigated whether such weapons could be targeted to people of different ethnic origins, who have biochemical differences so they react in different ways to smells, and to match emotional responses such as pain and fear to specific smells. Other chemicals include slippery anti-traction substances designed to deny people and vehicles access to protected areas. In the area of genomics and neuroscience, some of the most remarkable scientific and technological advances will be seen in relation to future incapacitating chemicals.

Should we be worried about this technological progress? Although there are evident advantages linked with these new non-lethal weapons—eg, it could be argued that it is better to be temporarily stunned than beaten about the head with a truncheon—there are also key areas of concern associated with their development and deployment. These include threats to existing weapons control treaties, their use in human rights' violations such as torture, harmful biomedical effects, and what some analysts fear is a dangerous potential for use in social manipulation and social punishment for political control.

Published work has documented harm done to patients, especially by rubber and plastic bullets and CS gas. Eye injuries have been extensively recorded. During the early 1990s, much debate took place about blinding laser weapons; organisations such as the International Committee of the Red Cross campaigned vigorously, arguing that such weapons could cause unnecessary suffering and superfluous injury, as defined by the United Nations inhumane weapons convention.

Although many of these new generation non-lethal weapons have yet to be fully developed and operationally deployed, emerging non-lethal technologies will result in new challenges for medical personnel, in the treatment of psychological and physical effects. It is an area in which health professionals must be aware of the symptoms of potential human rights abuse by such weapons, and in the development of appropriate treatment regimens.

Further reading

Lewer N. The future of non-lethal weapons: technologies, operations, ethics and law. London: Frank Cass, 2002.

National Research Council of the National Academies. An assessment of non-lethal weapons science and technology. Washington DC: National Academies Press, 2003.

Rappert B. Non-lethal weapons as legitimising forces? Technology, politics and the management of conflict. London: Frank Cass, 2003.